Vol. 72, pp. 69-74 July 24, 1959

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

TWO NEW TROGLODYTIC MILLIPEDS FROM TEXAS

By Nell B. Causey
Fayetteville, Arkansas

Six, or possibly five, species of millipeds have been collected in Texas caves. Additional forms will certainly be discovered, for relatively little collecting has been done. These troglodytic millipeds are either cambalids or polydesmids and are not known to have close relatives in the nearby epigean habitats, where the dominant orders are Julida and Spriostreptida.

The following summary includes the millipeds and the caves from which they have been collected: *Eclomus specobius* Chamberlin 1952 and *Cambala caeca* Loomis 1953, which possibly are synonyms (Loomis, 1953), from both Wyatt Cave and Felton Cave, Sutton County; *Cambala* sp. from Mayfield Cave, Sutton County; *Cambala captiosa*, n. sp., from Beck's Ranch Cave, Williamson County; a small, eyeless cambaloid form, possibly epigean, of uncertain genus, from Big Mouth Cave, Wheeler County; *Speodesmus echinourus* Loomis 1939, from Prassel Ranch Cave, Kerr County, Ezell's Cave, Hays County, a tentative determination (Chamberlin, 1952) from Wonder Cave, Hays County, Schneider Cave and Cascade Cave, Kendall County; and *Speodesmus bicornourus*, n. sp., from Beck's Ranch Cave, Williamson County.

Cambala captiosa, new species
Figures 1-3

Diagnosis: An eyeless species closely resembling *C. caeca*, from which it can be distinguished by the absence of a caudally produced margin on the posterior angle of the collum and by the presence of hooked setae on the apex of the coxa of the posterior gonopod.

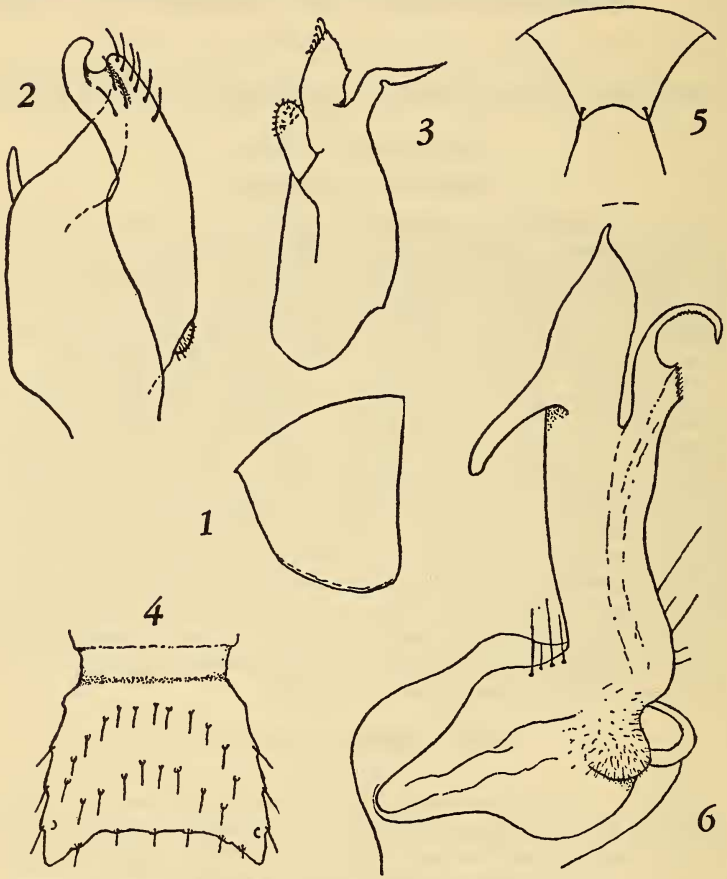
Type material: Male holotype, American Museum of Natural History; female and larval male paratypes in the author's collection.

Type locality: Beck's Ranch Cave, Beck's Ranch, 6 miles west of Round Rock, Williamson County, Texas, 1 ♂, 1 ♀, 1 larval ♂, Dec. 10, 1955, W. McAlister and D. Kyser.

Range: Known only from the type locality.

Description of male holotype: Length about 19 mm., width 1.5 mm., 41 segments, the last three legless. Dark brown in alcohol.

Head smooth, without ocelli, the clypeus with 4 widely spaced setae



EXPLANATION OF FIGURES

Cambala captiosa, n. sp., male holotype. Fig. 1. Collum, left lateral view. Fig. 2. Right anterior gonopod, ventral view. Fig. 3. Left posterior gonopod, lateral view.

Speodesmus bicornourus, n. sp., male holotype. Fig. 4. Sixteenth body segment, dorsal view. Fig. 5. Anal scale. Fig. 6. Right gonopod, posterior view.

and the labrum with about 14. Antennae thickened, the second segment almost twice as long as broad and segments 5 and 7 broader than long; segments in order of decreasing length 2, 3, 4, 5, 6, 1, 7. Collum as long as the next three segments combined; from a lateral view (fig. 1) the posterior margin appears almost straight; the lateral margin is slightly raised from the level of the dorsal ridge of the antennal furrow to the posterior angle; a few very indistinct horizontal triae can be seen on the posterior margin above the posterior angle. Segment 7 is approximately one-half broader than the second through the sixth segments. Tergites of the first three and the last segment are entirely smooth above; each of the remaining segments has six conspicuous dorsal crests and about 12 much less distinct crests and striae on the lateral and ventral surfaces; dorsal crests of segment 4 not as well developed as those of the following segments; segment 2 with a small lateral crest at about the level of the posterior angle of the collum; segments 2 and 3 with a few faintly indicated striae on the lateral and ventral surfaces. Pore crests begin on segment 5 and continue through penultimate segment and are typically the same height and length as the four plain dorsal crests; anterior half of pore crests about four times as broad as posterior half and slightly higher. Anal tergite as long as the two preceding segments, its apex not extending beyond the anal valves; anal valves smooth, inflated; preanal scale broad.

First legs composed of 5 segments, the basal one with an acute lateral lobe, the distal one with a terminal claw. Segments 3 and 4 of legpairs 6 and 7 inflated and rounded on the ventral surface.

Apex of anterior gonopod (fig. 2) longer and more sharply curved than in *C. caeca*. Apex of coxa of posterior gonopod (fig. 3) with several hooked setae and the short telopodite with numerous short prickles on the apical half, distinguishing this species from *C. caeca*.

Female paratype: Length about 23 mm., width 1.9 mm., 50 segments, the last one legless. Arrangement of crests and other somatic characters as in the male.

Cambala sp.

Record: Mayfield Cave, Sonora, Sutton County, Texas, 1 mutilated specimen of undetermined sex, Feb. 9, 1957, Ross Gurner. Width 1.5 mm., 2 legless segments, collum as in *C. caeca*, which has been collected in nearby caves.

Speodesmus bicornourus, new species

Figures 4-6

Diagnosis: Distinguished from *S. echinourus* by its larger body, longer legs, shorter setae on the dorsum, and the presence of only two setae on the preanal scale.

Type material: Male holotype and female paratype, American Museum of Natural History; remaining male and female paratypes in the author's collection.

Type locality: Beck's Ranch Cave, Beck's Ranch, 6 miles west of

Round Rock, Williamson County, Texas, 3 ♂, 4 ♀, Dec. 10, 1955, W. McAlister and D. Kyser.

Range: Known only from the type locality.

Description of male holotype: Length about 19 mm., width 1.2 mm., length of antennae about 3 mm. Color in alcohol pale yellow-gray. Body loose-jointed.

Collum almost as broad as head, its anterio-lateral margin semicircular and its posterior margin very slightly concave; lateral margin slightly irregular and without well defined teeth; anterio-lateral margin with 14 setiferous tubercles; one-third of the way back from the anterior margin there is an irregular row of 8 setiferous tubercles, and two-thirds of the way back is another irregular row of 8. Surface between tubercles smooth on all segments. Metatergite of second segment rectangular, as broad as any of the other tergites, its lateral margin with about 7 irregular teeth. Metatergites of segments 3 and 4 slightly longer and broader than collum, their anterior angles, as on all of the following metatergites, are rounded and the lateral margins have 3 setose teeth and one or two indistinct teeth without setae. On succeeding segments the anterior angles of the metatergites are more broadly rounded, the posterior angles are more acutely produced behind the posterior margin, and the lateral teeth are minute. Ratio of length to width of metatergite of segment 8 about 3/4; on more posterion segments it is about 8/9 ,fig. 4). Metatergites 2 through 19 each with 3 transverse rows of setose tubercles, with from 8 to 12 in the first and second rows and 6 in the row on the caudal margin; on segments 2 through 5 all three rows are almost straight; from segment 6 on back the first row is strongly bowed and the second row is moderately bowed. Pore formula normal. Pores open on the dorsal surface of the metatergites near the third setigerous tooth.

Typical legs are about 3 mm. long, slender, with the ratio of the length of the segments, beginning with the first, as follows: 3, 10, 24, 8, 9, 27. The first and second legspairs are one-half and two-thirds the length of typical legs, respectively. Other legs anterior to the gonopods are slightly shortened. No tubercles were observed on the legs.

In situ, the solenomerite of the gonopod is contiguous with its mate in the middle line. The retrorse lateral spine seems to be nearer the apex of the telopodite than in *E. echinourus*, which I have not seen; the solenomerite is a relatively short branch and the opening of the seminal canal is minutely fringed (fig. 6).

Specodesmus echinourus

Record: Ezell's Cave, San Marcos, Hays County, Texas, 1 ♀, 1 larval ♂, Mar. 25, 1937, Ottys Sanders. In this species the body is much smaller, the legs are shorter, the dorsal setae longer and more numerous, and the lateral teeth distinctly sharper than in *S. bicornourus*.

I am indebted to Dr. T. C. Barr, Jr., and to Mr. Ottys Sanders for the specimens used in the preparation of this paper.

REFERENCES CITED

Chamberlin, R. V.

1952. Three cave-dwelling Millipeds. Ent. News, vol. 63, no. 1, pp. 10-12.

1952. *Eclomus* nom. nov. (Diplopoda). *Ibid.*, vol. 63, no. 3, p. 71.

Loomis, H. F.

1939. The millipeds collected in Appalachian caves by Mr. Kenneth Dearolf. Bull. Mus. Comp. Zool. Harvard, vol. 86, no. 4, pp. 165-193, 14 figs.

1953. New millipeds of the Western States and Lower California. Jour. Wash. Acad. Sci., vol. 43, no. 12, pp. 417-422, 20 figs.